I.

Introduction

In creating the European Research Area (ERA), requirements for the efficiency of research and its evaluation, for decisions concerning awards of public subsidies for research as well as other areas relating to research and for research management have emerged. At the same time, demands not only for expertise of researchers and quality of research institutions but in an increasing extent also for the ethics of research and related areas are coming to the fore.

It is the national competence to ensure the ethics of research. The European Commissionaire for Science and Research, Janez Potočnik, admits ethical plurality within the European Research Area, while underlining that the drawing up and adhering to ethical rules in this field is a matter for each EU Member State.[1]

The National Policy of Research and Development of the Czech Republic for 2004–2008 (NPR&D), which was approved by Government Resolution No. 5 of 7 January 2004, states the improvement of the ethical level in research and development and at the same time it recommends that research institutions, which have not yet issued their own codes of ethics, to do so. The same applies to the establishment of Ethical Commissions (paragraphs 115 and 117). Simultaneously, the NPR&D promised to support the exchange of experiences and findings concerning the development and application of codes of ethics. Strategies of individual ministries, which were drawn up as a follow up to the NPR&D, frequently pay attention to ethics (see Annex). For the purpose of supporting the implementation of the effective National Policy of Research and Development in the area concerned, a working group for developing the Draft Ethical Framework for Research which would summarise the fundamental aspects of general ethics in research and offer them, through the involved bodies of state administration, to research institutions as a basis for developing and/or updating their codes of ethics was established at the Ministry of Education, Youth and Sports. In developing this document a number of domestic and foreign sources were used. With regard to domestic sources, the Good Scientific Practice of the Grant Agency of the Czech Republic should be mentioned[2]. As regards foreign sources, in particular Good Manners in Science of the Academy of Sciences of Poland[3], which affected some chapters of the Ethical Framework for Research, cannot be omitted; furthermore the Recommendation of the Commission for Professional Self-Regulation in Science of the German Research Society[4] should be mentioned. Last but not least there was a survey of Ethical and Policy Issues in Research Involving Human Participants drawn up by the American National Bioethical Advisory Commission[5]. When developing the above-mentioned document some important European documents, mainly those of the All European Academies[6] and the European Science Foundation[7], were considered and the Recommendation of the European Commission on the

[1] „Delegates identify common ground for European action in research ethics“ CORDIS *focus* , No. 252, page 5, February 2005.
[2] Správná vědecká praxe (good Scientific Practice), Recommendation of the Board of the GA of the Czech Republic, April 2000.
[3] Good Manners in Science, Academy Sciences of Poland, third completed edition, Warsaw 2001.
[4] Recommendations of the Commission on Professional Self regulation in Science, DFG, January 1998.
[5] Ethical and Policy Issues in Research Involving Human Participants, Maryland 2001.
[6] Memorandum on Scientific Integrity – ALLEA, Amsterdam 2001.
[7] European Science Foundation (ESF), http://www.esf.org.

European Charter of Researches including the Code of Conduct for the Recruitment of Researches was made good use of.[8]

Even during the preparatory phase of the previous National Policy of Research and Development of the Czech Republic in 2000, the draft Ethical Code of Institutions Involved in Research and Development and draft Code of Ethics for Scientists were drawn up.[9] The aforementioned document which was not an integral part of the Government Resolution No. 16 of 5 January 2000 concerning the approved strategy (the so-called National Policy of Research and Development) should have become the basis for drawing up codes of ethics at the level of individual institutions. The document contains a considerably wider range of areas than the Ethical Framework of Research including some specific branches which ethical standards relate to. The specific content of such standards was mostly left to be developed by the respective institutions with the exception being a quite precise definition of the general content of the codes of ethics. Therefore the Ethical Framework of Research does not deal with the detailed analysis of the content of a code of ethics but it refers to the aforementioned documents of 1999. The subject of the approved document does not include ethics in the mass media and other areas relating to research which have already been mentioned in the relevant parts of the Set of Basic Documents of 1999.

The objective of the Ethical Framework of Research is in particular to make some ethical aspects of research, which are generally valid (publishing, copyright, evaluating and training activities, informed approvals and so forth), more specific so that these can be incorporated into the codes of ethics of institutions regardless of the focus of the research they carry out. The orientation of this document towards the more particular definitions of quite a limited area of generally valid ethical principles of research primarily differs this document, approved by the Government, from the above mentioned documents of 1999. The Ethical Framework of Research does not possess the features of a strategic material which should be further elaborated (specified or modified) but it is rather a list of principles being recommended to individual institutions to be incorporated into their codes of ethics. The documents of developed countries which became the basis for drawing up the Ethical Framework (see Footnotes) were drafted in the same way.

Quite an important area of the conflict of interests is not described in a separate chapter since, when drafting the document, it was considered that there is no one special area of conflict of interests but that possible conflicts may interfere with a number of research fields. Therefore the conflict of interests is mentioned in several points of the Ethical Framework of Research, in particular in:

a) individual ethical responsibility of a researcher in points 3.1. (b) and 3.5. (d), (e) and (g),
b) ethics of a research institution in Chapter 4 (g), (h) and (n).

It is practically impossible to draw up one comprehensive code of ethics which would be applicable in all institutions irrespective of their specific activities. Moreover, there is a direct link between general ethical aspects in research and special ethical standards valid only in a given area (for example medical research, research involving animals, defence research, and so forth). Therefore the document approved by the Government addresses only general ethical

[8] Commission Recommendation on the European Charter for Researchers and on the Code of Conduct for the Recruitment of Researchers, C (2005) 576.
[9] See note No. 7 in Part II. thereof.

matters so that each research institution is free to take into account its own general ethical aspects in a particular code of ethics. This is why this document does not concern ethics in the aforementioned special areas where relevant research institutions are the most competitive entities to complement or clarify their respective codes of ethics.

With regard to the current preparation of the Act on Research of Human Embryonic Stem Cells and to its further possible use, especially in social sciences, the agreed upon document also contains a section concerning an informed consent.

The Ethical Framework of Research deals with state administration of research only marginally since the conduct of civil servants is governed mainly by the Code of Conduct of Employees in Public Administration approved by Government Resolution No. 270 of 21 March 2001.

The approved document was drawn up by the Ministry of Education, Youth and Sports (MEYS) in cooperation with the above mentioned working group established specifically for this purpose. The working group consisted of experts from the Faculties of Medicine of Charles University and their hospitals, institutes of the Academy of Sciences of the Czech Republic, a range of other research institutes, the Institute for the Care of Mother and Child, the Technological Centre of the Academy of Sciences of the Czech Republic and its Bioethical Commission, the University Centre for Bioethics of the Faculty of Medicine of Masaryk University in Brno, the Ministry of Health and its Central Ethical Commission and representatives of the main party responsible for submitting the document.

On 28 April 2005 the e-mail address etika@msmt.cz was set up for the involved parties to send their comments concerning the working draft of the Ethical Framework of Research. Representatives of important organisations (the Academy of Sciences of the Czech Republic, the Council of Higher Education Institutions, the Czech Conference of Rectors, the Trade Union for Higher Education Institutions) were informed of this option. Some foremost personalities engaged in research, in particular research carried out at higher education institutions, provided their comments.

Not only comments regarding the Ethical Framework of Research itself but also comments concerning some disclosed cases of violation of ethics in research (see for example Aula, Vol. 13, No. 1/2005, pp. 52-53) were received at the aforementioned e-mail address. Implementation of accepted ethical standards at the national level should contribute not only to prevention but also to efficient solution of such situations.

II.

Ethical Framework of Research

1. PREAMBLE

The Ethical Framework of Research shall formulate the basic rules of ethical behaviour of researchers and their conduct in research on the basis of generally recognised ethical standards common in this area in developed countries. In preparing this framework document, the foreign codes of ethics, charters and other documents as well as the ethical principles of good practice in the Czech Republic were taken into account. Experts from a range of institutions listed in the introductory part were substantially involved in its development and influenced with their comments both the content and scope of the document concerned. In particular, the fragmentation of results for the purpose of achieving a higher number of publications was stressed not to be ethical.

The document is for recommendation purposes only and should be inspiring and play an updating role in drawing up and amending codes of ethics or similar documents for research carried out at higher education institutions, the Academy, or other research institutions.

2. FUNDAMENTAL ETHICAL PRINCIPLES OF RESEARCH

I) ***Research freedom and responsibility***

II) ***Respect for opinion plurality and tolerance***

III) ***Respect for human dignity and autonomy at research***

IV) ***Transparency***

V) ***Solidarity and cooperation in research***

VI) ***Usefulness and not causing damage, every risk of research must be balanced by its benefit***

3. ETHICS AND THE RESEARCHER

The purpose of this chapter is to support the development of desirable standards of conduct of researchers, and thus to prevent any conflicting situations between individual researchers or between researchers and third parties (such as publishers, research administrators, and so forth), conflicts of interests, disputes about authorship and, last but not least, to help improve relationships between the research community and society. Furthermore, the following text deals with publications and publishing. Although it is not explicitly stipulated below this document always takes into account scientific documents which are often reviewed or, when having been published, quoted by other authors (see section 3.3.).

3.1. The researcher:

a) shall be accountable, on the basis of his/her professional knowledge, for correctness and objectivity of his/her research (including studies and literature reviews, proposing and carrying out experiments, observing and publishing the acquired results);
b) shall reject any managing or advisory role in research management (including participation in expert advisory bodies of a funder), administration and/or funding research if there are justified profound concerns that personal, scientific, professional, financial or any other activities could result in a conflict of interests, and thus could affect his/her objective views, competencies and decision making abilities when executing such functions;
c) shall share his/her research results with other members of the relevant research team;
d) shall not use scientific and/or scientific and pedagogic academic degrees provided that to obtain them he/she submitted and used documents which were probably acquired in contradiction to ethical principles[1];
e) shall neither cover non-ethical conduct in his/her environment (see also point k) of Section 3.5.), nor seek for pretences to disguise his/her violation of ethical principles of research;
f) shall, as a member of expert boards (scientific councils/boards, expert advisory bodies, and so forth), adhere, in his/her decision making and voting in professional matters, exclusively to professional opinions;
g) shall cooperate with ethical commissions [2] when meeting their assignments.

3.2. Authorship and co-authorship of a publication is a possession of a researcher who has met a minimum of the following conditions:

a) has written a part of the manuscript;
b) substantially and professionally he himself/she herself or as a team member has contributed by intellectual activities to a creative process leading to the required results and/or to the publishing of results of activities in a monographic publication, scientific periodical press, miscellany or through any other media;
c) has drawn up a draft strategy of research or gathered and selected the data the research is essentially based on, and as a consequence he/she by a decisive manner contributed to achieving the published results of such research;
d) has merged in a higher unit a different theoretic basis and thus considerably affected the quality of the published results of such research;
e) has elaborated a conceptual model, proposed the manner of evaluation, has been involved in the analysis of data or interpretation of results which substantially contributed to the scientific value of the publication concerned;.

[1] This point was completed by several comments arising from the circulation of a document for comments. Such comments refer to cases published in Aula, Vol. 13, No. 1 p. 52, which outlined the difficulties to resolve some matters concerning the area of scientific and pedagogical academic degrees by a legal manner which means that implementation of fundamental ethical principals in this area is even more important.

[2] In compliance with the National Policy of Research and Development of the Czech Republic in 2004–2008, in particular paragraph 117, establishment of ethical commissions in institutions involved in research is assumed. Chapter 4, mainly recommendations contained in paragraph b) thereof, deals with the establishment of ethical commissions/committees.

3.3. The researcher as an author or co-author of a publication[3]:

a) shall not commit plagiatorism[4] – always when quoting another author he/she shall refer to the information source and when summarising findings of another author the researcher shall express the original ideas in good will and without conscious deformation;
b) shall also quote essential works which do not confirm his/her presumptions and interpretation of results;
c) if he/she finds a substantial error in his/her published data, he/she shall adopt the corresponding steps to correct errors in the publication concerned, such as issuing an erratum or any other corrective text, withdrawing the publication from print or taking other appropriate measures;
d) shall not uselessly draw up redundant publications[5] and shall not fragment research results into more academic papers to the detriment of their quality and good arrangement of the data;
e) shall not obtain quotations of his/her works through the agreement of several authors on mutual quotations of their work.

3.4. The researcher in a role of a manager and teacher:

a) shall select his/her colleagues and students for the work in research on the basis of unbiased assessment of their intellectual character and, in some cases, also creative preconditions;

---

[3] A publication (an academic paper) according to Wikipedia – the free encyclopaedia (http://en.wikipedia.org/wiki/Scientific_paper) is an academic work that is usually published in an academic journal. It contains original research results or reviews existing results in a respective area. Such a paper will only be considered valid if it undergoes a process of peer review by one or more referees (who are academics in the same field) in order to check that the content of the paper is suitable for publication in the journal. Only substantial intellectual contribution to the results of the published research qualifies researchers for being included among authors. Mechanical activities (such as lab work, input of data into a database, administration) are not sufficient reasons for authorship. Neither persons solely to honour them or to show kindness nor superiors who otherwise do not satisfy conditions for authorship should be included among authors. If there are justified reasons, the aforementioned scholars may be included in "thanks section".

[5] The majority of authors of academic papers or research publications are researchers or scholars from higher education institutions, institutes of the Academy of Sciences of the Czech Republic and other research institutions involved in different fields. As a number of publications is an important criterion for researcher's appraisal and plays an important role in career promotion on the basis of decisions taken by the Certification Commission, researchers and scholars are naturally motivated to publish the largest possible number of articles. Unfortunately, such motivation can lead to problematic unethical publication of redundant articles which differ from already published works of the same authors only by minimal text modifications and usually contain the same data (although in different breakdown or different units, and so forth). The name, abstract and the sequence of authors differ in the "redundant" publication only minimally from the original work. An extreme case of a redundant paper is a duplicate of an original work of the same author.

Later development of results included in miscellanies from conferences and pre-prints (which might also be short information) into a regular academic paper is not considered to be a redundant publication.

Publication of similar (i.e. redundant) articles may be excused, in terms of ethics, merely if the author may be convinced, and his/her opinion is justified, that it is in the interest of the reader. Such a reason may be an extension of the audience (for example language mutations). In this event publication of similar information should be made after the agreement of both (or more) publishers.

Publication of similar (i.e. redundant) articles can be tolerated in the event that the author sent his/her manuscript to a publisher who for a long period of time made clear that he/she had not accepted and would not probably accept this work (for example the publisher did not communicate with the author). Therefore the author offered his/her work to another publisher although the work was, after all, accepted in both publishing houses and was published twice.

In general, writing redundant texts is condemnable since it delays publishing original articles. Reviewers, who take this work as an honour and write their reviews without claiming any remuneration, are unnecessarily overloaded.

b) shall share his/her knowledge, skills and principles of good conduct in research;
c) shall place an emphasis on teaching students and shall request the same from his/her subordinates;
d) shall develop independent critical thinking of students and shall respect their right for free expression of their opinions of the research concerned;
e) shall include students and subordinates among authors of a publication if their creative work contributed to the results published thereof;
f) shall support research and publication activities of his/her subordinates and students as well as their further qualifications;
g) shall not accept, within his/her scope of responsibilities, a researcher demonstrating unethical conduct in the position which enables such a researcher to influence students by direct teaching, educating or by research work itself;
h) shall consistently sanction unethical conduct of his/her subordinates and students that he/she is responsible for;
i) shall correctly apply the legal provisions regulating relationships when executing dependant work for research.

3.5. The researcher as an assessor, reviewer, evaluator, or objector:

a) shall, when being requested, review or evaluate activities personally;
b) shall take the necessary steps to clarify data in a draft publication where there is a justified opinion that the data was falsified or otherwise modified;
c) shall approach a review or any other assessment by adequately trusting the submitted data and does not delay a review or other assessing procedures by redundant requirements;
d) shall not extend an assessment of research work for the purpose to achieve advantages for him/herself or for any third parties;
e) shall not develop an opinion which could be influenced by his/her personal interest or shall point out this fact in advance;
f) shall not use data contained in the draft publication for any other purpose than that for developing a review and shall not provide it to any third parties;
g) shall refrain from other conscious conflicts of interest, not expressly stated above;
h) shall develop an expert opinion concerning only the area he/she is specialised in;
i) shall state a clear opinion in his/her expert review;
j) shall not, when developing his /her expert opinion, succumb to external pressures which could, in any manner, affect the grounds of the content of his/her opinion;
k) shall not cover his/her own unethical conduct or unethical conduct of others when developing an objecting opinion or reviewing (or any other evaluation or assessment [6]);
l) shall assess, when evaluating a draft grant project, the research objective or any other proposal for research within a reasonable scope of costs covered from public funds;
m) shall respect confidentiality and protection of intellectual property contained in evaluated papers.

4. ETHICS AND INSTITUTIONS INVOLVED IN RESEARCH

Research institutions adopt their own codes of ethics which are based on the general principles of ethics in research but they also contain specific ethical rules for the respective research area. Whilst maintaining freedom of research activities these institutions should oblige their members and employees to adhere to relevant ethical rules. Research institutions should adopt principles for discussing cases of alleged unethical conduct (including the

[6] It is also applicable for decisions made by different collective bodies of assessors.

definition of cases of unethical conduct, specification of a legitimate manner of how such cases will be discussed, specification and enforcement of sanctions). The conduct which displays signs constituting the reasons to believe that the ethical principles stipulated herein or in other generally recognised relevant ethical standards were violated can be considered to be allegedly unethical.

The management of scientific institutions carrying out research are responsible for creating the environment where researchers are stimulated to achieve the highest possible standard of their work.

Research institutions are recommended to:

a) draw up and adopt their own codes of ethics arising from general principles of scientific work and generally valid ethical principles[7];
b) establish, according to the organisational structure of an institution, an Ethical Commission or more Ethical Commissions monitoring how ethical principles and rules are adhered to and dealing with particular cases of incorrect conduct and violation of ethics of research work[8];
c) determine whether the Ethical Commission has been established for the whole institution or for its part only;
d) disclose provisions of the Ethical Commission and the list of their activities;
e) pay attention to expertise, integrity and a high level of research ethics of the Ethical Commission's members, expert advisory bodies of a funder and other relevant bodies and to ensure public access to their professional curricula vitae and overview of their publications and other professional activities (however, when doing so, Act No. 101/2000 Coll., on the Protection of Personal Data and on the Amendment to Some Other Acts, amended and consolidated, must be respected),
f) take into account that any high level of expertise cannot constitute the reason for exceptions from ethical standards;
g) prevent conflicts of interest, in particular by excluding any biased objector and by requesting Chairs as well as members of assessment commissions or other decision-making bodies to sign the statement on their impartiality;
h) at the beginning of each research project, identify possible conflicts of interest and eliminate them since research objectivity can be influenced or challenged by possible links of research to sponsors, customers, and so forth;
i) support equal integration of junior researchers into research teams;
j) ensure equal opportunities for job applicants;
k) include into the code of ethics the concerned relevant issues of employment that the European Charter for Researchers deals with[9];

[7]Content and details are appropriately stated in Chapter "Moral and Ethical Aspects of Research and Development" in the Set of Documents of Working Groups used to develop the National Policy of Research and Development of the Czech Republic published by the Council for Research and Development in 1999, pp. 139-148, available on http://www.vyzkum.cz/FrontClanek.aspx?idsekce=612#att.

[8] Where, due to objective or technical reasons, it is not reasonable to establish a permanent Ethical Commission then an ad hoc Ethical Commission will be set up to discuss particular cases of incorrect conduct and violation of research work ethics.

[9] The European Charter for Researchers and a Code of Conduct for the Recruitment of Researchers - Recommendation of the European Commission of 11 March 2005, C (2005) 576 includes the following areas: recognition of the profession, non-discrimination, career development, value of mobility of a researcher, development of the stimulating environment, stability and permanence of employment, funding and salaries, access to research training and continuous development, access to career advice, rights of intellectual property and co-authorship, gender balance, management supervision, research and teaching, evaluation/appraisal system

l) not tolerate in the decision-making and assessing bodies operating within the institution concerned persons who cover up, ignore or enable unethical conduct;
m) respect confidentiality and protection of intellectual property;
n) cooperate transparently and without any conflict of interest with the private sector;
o) care about adherence to ethics when funds for research are distributed;
p) cooperate with the general public and state administration bodies, to provide information on research objectives in the institution, on its methods and possible environmental or other risks arising from such research.

5. TYPICAL EXAMPLES OF ETHICS VIOLATIONS

- Obtaining financial means for a certain purpose or other funds for research and development in a fraudulent manner (presenting of non-existing qualifications, providing incorrect information of previous results and practice, creating false and deformed "image" of results, and so forth);
- fabricating and falsifying results of research and their presentation;
- infringing intellectual property rights or manipulating such rights by stating parts of texts or facts published by other authors without references to them or without thanking them;
- intentional incorrect interpretation of results of reviewed studies, observations or experiments;
- presenting fictitious results as results of observations or experiments;
- selective choice of data, in particular leaving out some data with the aim to support presumed hypothesis, and so forth;
- intentional incorrect interpretation of results of creating deformed conclusions for special purposes on the basis of incorrect interpretation;
- such behaviour towards colleagues or subordinates which is conducted with the aim to influence results of their research (a discussion on certain research is not meant by this);
- intentional presentation of results of other researchers in an incorrect and slanted manner;
- presenting him/herself as an author or co-author without significantly contributing to gather, interpret or process research results;
- not including authors who substantially contributed to research and, on the other hand, listing names of researchers who were not involved in research or publication either at all or only minimally;
- negligence when carrying out research;
- unauthorised obtaining of personal data during research by pretending that it is not personal data (for example combination of data in a questionnaire and application for completing personal data in an annex to an anonymous questionnaire);
- inappropriate treatment of confidential and sensitive information;
- making copies of a design and/or software without previous consent.

---

of subordinates, complaints and appeals, participation in decision-making bodies, working conditions and strategies for recruitment.

6. ETHICS OF ACQUIRING INFORMED CONSENT IN RESEARCH INVOLVING HUMANS

If personal data is used within research involving humans it is necessary to acquire the informed consent of persons involved.[10] Specific conditions for using such data in research or research related activities are stipulated by law.[11]

6.1. Acquiring Informed Consent for Research

When acquiring informed consent the participants of research are provided with information by a responsible researcher on:

a) the purpose of research, its expected duration and course;
b) the right of participants to later refuse to participate in research and consequences of such rejection;
c) serious unpredictable factors which may affect the willingness to participate in research, such as potential risks (of all kinds), inconvenience or negative effects;
d) benefits arising from the research in question;
e) the extent of confidentiality in research and utilisation of its results;
f) remuneration for participating in research;
g) an information point for inquiries concerning research and rights of people involved in it.

At the same time participants must be given an opportunity to ask questions and receive answers to them.

6.2. Exemption from Informed Consent for Research

A researcher shall not be obliged to require informed consent for research only if there are lawful reasons and the research will not cause any damage, inconvenience or other harm, and it shall include:

a) concealment of some aspects of sociological or psychological research and some other types of research (educational methods, health care) for an indispensable time (see letters a), d) or f) in Section 6.1.);
b) study of educational methods and classroom management;
c) anonymous questions, natural observations and research of archives for the disclosure of which does not constitute a legal or any other threat (loss of reputation, property or employment of a research participant).

Table of Contents

[10] Involved persons provide informed consent for research involving human beings. This subject is solved by the Convention of Human Rights and Biomedicine which came into effect in the Czech Republic on 1 October 2001.
[11] Act No. 101/2000 Coll., on the Protection of Personal Data and on the Amendment to Some Other Acts, as amended

ANNEX
(to the Ethical Framework of Research)

Ethics in Ministerial Policies of Research and Development and in Important International Documents

1. Ethics in Ministerial Policies of Research and Development

Issues relating to ethics were reflected in the policies of a number of ministries and other administration authorities. They are, in particular, the Ministry of Culture, the Ministry of Defence, the Ministry of Transport, the Ministry of Justice, the Ministry of Agriculture, the Academy of Sciences of the Czech Republic, the Czech Mining Office, and the State Office for Nuclear Safety. The list should be completed by the Good Scientific Practice of the Grant Agency of the Czech Republic mentioned in the Ethical Framework of Research.

The policy of the Academy of Sciences of the Czech Republic (hereinafter referred to as "ASCR") deals with the issues of ethics in the detailed manner and states that ASCR staff are governed by valid legal regulations, principles of civic ethics and generally accepted ethical principles. However, sciences operate in the environment and within the relations which are not possible to regulate in full detail by legal provisions. Sensitive issues of an ethical nature may arise from any scientific work. In order to solve such problems and as a platform for the discussion on how to apply ethical principles in sciences and research, the Scientific Board established in 2002 the Commission for Ethics of Scientific Work (hereinafter referred to as the "Commission"). This Commission will continue to function as a permanent body of ASCR dealing not only with general principles but also with respective particular cases of violations of ethics of scientific work.

The climate at a workplace and a personal example of managing scholars, which are indispensable and cannot be replaced by a written standard, are of decisive importance in terms of adhering to ethical principles of scientific work.

A number of codes of ethics issued by universities, academies and other research organisations are to be found abroad. The Commission has already made available for scientific units of ASCR a document entitled "Memorandum on Scientific Integrity" published by All European Academies (ALLEA) which ASCR is a member of. The Commission namely stressed the part of the document summarising frequently occurring breaches of ethics of scientific work and recommended to all scholars, in particular managers at all levels, to consistently monitor whether such breaches occur within their unit.

Specific ethical issues relating to medical and biological sciences are becoming profoundly important. In this field basic ethical standards are defined by laws, regulations and recommendations of a different legal force and a degree of binding effect. ASCR does not and will not conduct research which would not be in compliance with such standards. As regards the sensitive issues of research, such as research of stem cells and cloning, ASCR will support a legal regulation which will prevent misuse of obtained findings, and at the same time it will enable research merely for medical purposes as recommended by international scientific societies.

Principles of general ethics of scientific work, which are common for scientific and research units of all branches of ASCR, can be summarised as follows:

- to provide true information when applying for subsidies on research objectives and projects;
- to treat results of literature study, monitoring or experiments impartially;
- to include sources when taking over results of other scholars;

- to provide the general public with information on the benefits of research results prudently;
- to respect authorship and co-authorship in publishing research results;
- to adhere to specified rules when working with confidential data;
- to respect copyrights when reproducing published results and texts or when using software.[1]

Adherence to such principles is one of the fundamental duties of researchers and to watch over them is an obligation of managers at all management levels. Junior researchers are informed on principles of ethics in scientific work in an informal manner by their on-job trainers as well as within Courses of Fundaments of Scientific Work held by ASCR.

Some ministries directly stated in their policies that either ministries themselves (e.g. the Ministry of Defence, the Ministry of Agriculture) or their respective research organisations would draw up codes of ethics which would be applied in practice (e.g. policies of the Ministry of Transport and of the Ministry of Defence). Other ministries will notify or recommend their respective research institutions to publish similar codes of ethics. They are for example the Ministry of Culture and the Ministry of Agriculture. The State Office for Nuclear Safety will recommend the State Office for the Radiation Protection and the State Office for Nuclear, Chemical, and Biological Protection to issue their respective codes of ethics. The Czech Mining Office has solved this issue by Measure No. 5/2001 of the Chair of the Czech Mining Office entitled "The Code of Ethics of Public Administration Employees" which has been issued for the needs of the State Mining Administration of the Czech Republic. In addition to the general principles of ethics in research, ministerial policies contain also issues of corruption, labour morale, transparency and impartiality in relation to research and development (in particular in the policies of the Ministry of Justice and the State Office for Nuclear Safety).

2. Ethics in Important International Documents

2.1. European Commission

2.1.1. Ethics of Scientific Research in Framework Programmes [2]

Progress made in biotechnology and biomedicine required that the issue of ethics is included in each framework research programme of the European Commission. The first ad hoc ethics committee (ELSA) was initiated by the European Parliament on the occasion of launching the 2nd Framework Programme (1987-1991). ELSA consists of 12 members who are independent from both the European Commission and from political, economic, and national interests. ELSA submits to the European Commission opinions regarding ethical, legal and social aspects in research and technologies having an extensive impact on the common life of citizens.

Ethics was incorporated into the 3rd Framework Programme by means of measures for specific research on medical ethics and by studies reviewing effects of biotechnologies.

Bioethical research in life sciences and an ethical dimension of submitted draft projects concerning very sensitive matters, such as use of human embryonic and foetal tissues and utilisation of animals, were commenced by the 4th Framework Programme.

[1] The Strategy of Development in Research and Development of the Academy of Sciences of the Czech Republic for 2005-2008. A special edition of the Academic Bulletin of 26th January 2005, p. 23.
[2] European Commission/ research: http://europa.eu.int/comm/research/science-society/ethics

A scope of an ethical dimension was extended, within the 5th Framework Programme, to all other programmes, especially to the INCO Programme. New unit "Ethic in Science and Research" was set up within the Directorate Science and Society.

The European Commission published in December 2001, the "Action Plan on Science and Society" which also contains six activities relating to ethics.

Bioethics also plays an important role in the 6th Framework Programme (2002-2006) and has become an integral part of living sciences, genomics and biotechnology for health as well as other priorities such as food quality and safety. Experts involved in ethics and social sciences are expected to participate in research projects in the fields of genetic testing, research of stem cells, clinical experiences, food safety or brain related research.

A special research programme on ethics in sciences is open within the specific programme known as "Networking the European Research Area".

Ethical Rules for projects of the 6th Framework Programme[3] are contained in the Guide for Project Proposals which is generally valid.

The bioethics home web side provides exhaustive information on:

- research projects with ethical content of the 6th Framework Programme;
- the network of European and international organisations specialising in ethical issues,

and discloses overviews of:

- national ethics commissions specialising in ethical aspects of research;
- fundamental documents;
- basic legislation relating to bio-sciences at the European level and biotechnological strategies in the world.

2.1.2. Conference "Research Ethics Committees in Europe: facing the future together"[4]

The European Commission invited representatives of local and regional ethics commissions/committees in Europe to participate in the conference "Research Ethics Committees in Europe: facing the future together" held on 27 and 28 January 2005 in Brussels. The aim of the Conference was to open a debate between participants on ethical issues of research, to identify the state of the art, while good practices, obstacles and pitfalls were considered, thus leading to the identification of future initiatives, actions and activities. The final report of the Conference[5] summarises information on ethics committees, specified criteria and analyses of activities. Thus the Report is very valuable and the most current source of information as it:

- provides the widest possible list of European ethics committees;
- analyses similarities and differences between them;
- analyses major challenges and obstacles in their activities;
- compares results of analyses made by European ethics committees with information on ethics commissions in the USA, Japan and India;
- gives examples of excellence between European ethics committees;
- gives recommendations on possible cooperation between European ethics committees and on enhancement of their activities;
- provides proposals for drawing up other studies and carrying out other activities..

[3] Ethical Rules for the 5th Framework Programme
http://europa.eu.int/comm/research/science-society/ethics/rules_en.html/

[4] Conference of EU Ethics Committees: http://europa.eu.int/comm/research/conferences/2005/

[5] Provision of Support for Producing a European Directory of Local Ethics Committees (LECs). Draft Final Report.(M.Fuchs), http://europa.eu.int/comm/research/conferences/2005/resc/pdf/lec_finalreport.pdf

2.1.3. The European Charter for Researchers and a Code of Conduct of the Recruitment for Researchers [6]

The European Charter for Researchers and a Code of Conduct of the Recruitment of Researchers are a set of general principles and requirements which specify the roles, responsibilities and entitlements of researchers as well as of employers and/or funders of research. The aim of the Charter is to ensure that the nature of the relationship between researchers and employers or funders is conducive to a successful performance in generating, transferring, sharing and disseminating knowledge and technological development, and to the career development of researchers. The Charter also recognises the value of all forms of mobility as a means for enhancing the professional development of researchers.

The Charter addresses all researchers in the European Union at all stages of their career and covers all fields of research in the public and private sectors, irrespective of the nature of the appointment or employment.

The European Commission recommends all EU Member States to incorporate the stated general principles into their respective national regulatory standards within establishing the European Research Area (ERA). The Commission will annually review how this recommendation is met.

2.2. European Science Foundation[7]

The European Science Foundation (ESF) is an association of 78 member organisations, involved in scientific research in thirty European countries. It was established in 1974 and it extensively coordinates pan-European scientific initiatives. The promotion of the high quality of science at the European level is central to its interest. The Academy of Sciences of the Czech Republic and the Grant Agency of the Czech Republic (hereinafter referred to as "GA CR) represent the Czech Republic

ESF plays an important role in the development of scientific policy and provides expert assistance within the wide scientific focus.

ESF also focuses on creating rules for good practices in Europe in cooperation with its member organisations, ALLEA, CRE, and similar groups. ESF participated in the conference "European Scientific Community: towards Fair Practice" organised by ICSU in the course of the General Meeting of UNESCO held in Paris on 27 October 2001.

The principal act of ESF in the field of research ethics is the article "Good Scientific Practice in Research and Scholarship" published in the European Science Foundation Policy Briefings.[8]

This document has become a basis for drawing up regional texts of good scientific practice in research (for example a set of recommendations for good scientific practice of GA CR).

Good scientific practice in research and scholarship is essential for the integrity of science. It sets internationally valid benchmarks for quality assurance, which enable replication and further studies by other scientists. It also provides safeguards against scientific dishonesty and fraud. Good practice, thus, nurtures trust within the scientific community and between science and society, both of which are necessary for scientific advance.

The most important scientific principle is honesty towards ourselves as well as others. Honesty is both an ethical principal and a base for rules (which may differ in various branches) of professional management of scientific work or good scientific practice. To

[6] Commission Recommendation on the European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers. 11 March 2005 C (2005) 576 final.

[7] European Science Foundation (ESF), http://www.esf.org

[8] Good scientific practice in research and scholarship, ESF Policy Briefings, p. 10, December 2000, Strasbourg), http://www.esf.org. Published also in the Bulletin of the Grant Agency of the Czech Republic, 1/2001, p. 7.

provide principles of good scientific practice to students and junior scientists is one of the fundamental missions of universities and all educational institutions. To ensure good scientific practice is implemented and applies is then a major task of self-regulation in science.

2.3. ALLEA[9]

All European Academies (ALLEA) is a European federation of national academies of sciences and humanities. Established in 1994 it associates 52 academies from 39 countries. Its member academies are self-regulating societies of scientists and scholars. ALLEA is striving to:

- support exchanges of information and experiences between member academies;
- provide advice to European science and member academies;
- achieve excellence in science and scholarship;
- achieve high ethical standards and independence from political, commercial, and ideological interests.

2.3.1. Memorandum on Scientific Integrity

The assembly of ALLEA held in Prague in 2000 reported on the results of a modest survey among the ALLEA members on scientific misconduct, and the role of Academies in dealing with, or preventing such misconduct. Distinctions were made between three types of misconduct:

- Fraud - (fabrication, falsification, selective use of data);
- Deceit (questionable methodology, negligence in sampling, inaccurate rendition);
- Infringement of intellectual property rights (pinching ideas, plagiarism):

It is welcomed that ALLEA takes an initiative in further development of principles of good scientific practice, however some academies have already drawn up their own documents. For example:

- *Code of Science* – Estonia
- *Good Manners in Science* – Poland
- *Memorandum on Scientific Integrity* – the Netherlands
- *Scientist's Codes of Ethics* – Latvia.

The result of collective efforts is "*Memorandum on Scientific Integrity (on standards for scientific research and a National Committee for Scientific Integrity)"* which has become a sample for publishing of Good Scientific Practice of GA CR.

2.4. DFG[10]

In 1998 DFG (Deutsche Forschungsgemeinschaft) published, as a response to cases of collective fraud in Germany, the publication entitled "*Proposals for Safeguarding Good Scientific Practice"*. It is a recommendation of the Commission for professional self-regulation in science. All research institutions, which intend to apply for project funding, are obliged to lay down rules safeguarding good scientific practice in all their institutions which will conform to recommendation specified by DFG. As a safety measure an ombudsman's office was established with DFG.

[9] All European Academies (ALLEA), http://www.allea.org
[10] DFG – Deutsche Forschungsgemeinschaft, http://www.dfg.de

2.5. Denmark[11]

The system in ethics in Denmark (a Danish model) has had more than twenty years of tradition.

1. The new *National Research Strategy* adopted in 2000, namely the Chapter 11.7, solves extensions of the issues of research ethics which proved to be successful in biomedical research, in all other research fields.
2. The Act on *the System of Ethics Commission in Biomedical Research* came into effect on 1 June 2003. Its aim is to define a framework for ethical evaluation of research projects of biomedical research. The Ministry for Science, Technology and Development is the responsible party.
3. *The Danish Committees on Scientific Dishonesty* (DCSD) providing annual reports on their activities have a long tradition.
4. The Copenhagen Summer School in Research Ethics determined for ethics research committees will be held in the capital of Denmark from 27 June until 1 July 2005.
5. A publication entitled "*The Scientific Ethical Committees – Yesterday, Today and Tomorrow*" [12] was published on the occasion of the 20th anniversary of implementing the system of ethical committees in Denmark.

2.6. USA

In the USA there has been a tradition of cultivating ethics in research both at universities, which carry out research, and institutions supporting research.

1. The Association of American Universities (AAU)[13] established in 1900 and associating 62 leading research universities in the USA and Canada drew up, in 1988 for their members, the Framework for Institutional Policies and Procedures to Deal with Fraud in Research. Subsequently, it is for each university to elaborate, according to this Framework, its own ethical research rules.
2. The National Institute of Health (NIH) devotes to ethics extraordinary attention since it is involved in medical research. The NIH Ethical Programme [14] includes not only standards of ethical conduct of federal employees but also individual ethical programmes of individual institutions and centres. The documents from bioethics and research ethics are available as well.
3. Bibliography relating to the issues of ethics in research in the USA is concentrated at Case Western Reserve University, USA, in the Ethics Center for Engineering and Science. It is accessible on-line.[15]

2.7. UNESCO[16]

The UNESCO ethical mission within the UN is nowadays, when the world is undergoing essential changes, one of the five UNESCO priority areas. It is implemented through the following programmes:

- on ethics in science and engineering,
- on bioethics.

[11] http://www.fsk.dk
[12] http://www.cvk.im.dk/visArtikel.asp?.artikellD=1537
[13] http://www.aau.edu
[14] http://ethics.od.nih.gov
[15] http://onlineethics.org/bib/newbib.html
[16] http://portal.unesco.org/shs/en

The largest success of the first programme was adoption of the *Universal Declaration on the Human Genome and Human Rights* in 1997 and *International Declaration on Human Genetic Data* in 2003. The *World Commission on the Ethics of Science Knowledge and Technology (COMEST).* This deals with the ethics of the environment, the principal of preliminary prudence, the ethics of outer space, ethics of scientific knowledge and ethics of teaching in scientific education.

The *International Bioethical Commission* was set up within the second programme.

The World Conference on Science organised by UNESCO along with the International Council for Science (ICSU) and held in Budapest in 1999 paid special attention to issues of ethical principals and responsibilities in scientific practice. Participants decided to draw up a study of international declaration on ethics in science focusing on the code of ethics of scientist conduct which should be submitted in 2007.